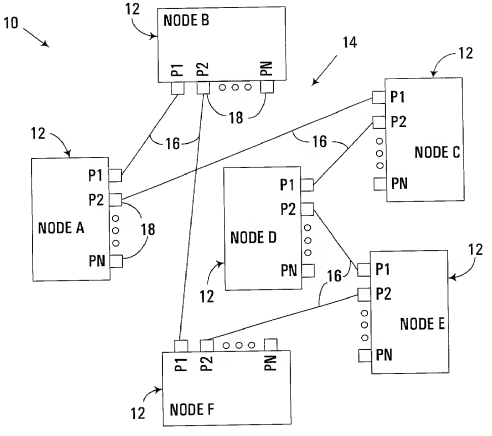


FIG. 1

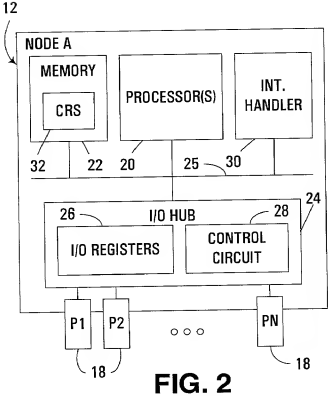


FIG. 2

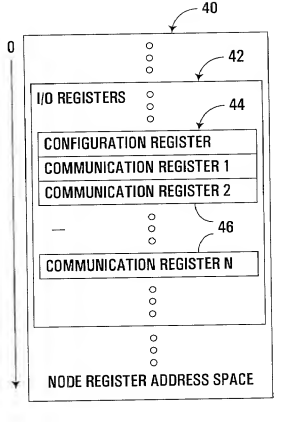


FIG. 3

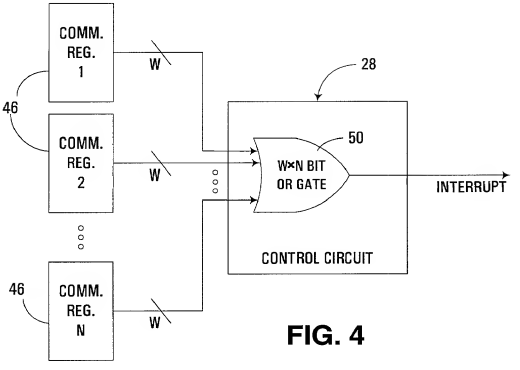
COMM. REG. 1
W
28
46
COMM. REG. 2
W
50
W×N BIT OR GATE
INTERRUPT
CONTROL CIRCUIT
46
COMM. REG. N
W

FIG. 4

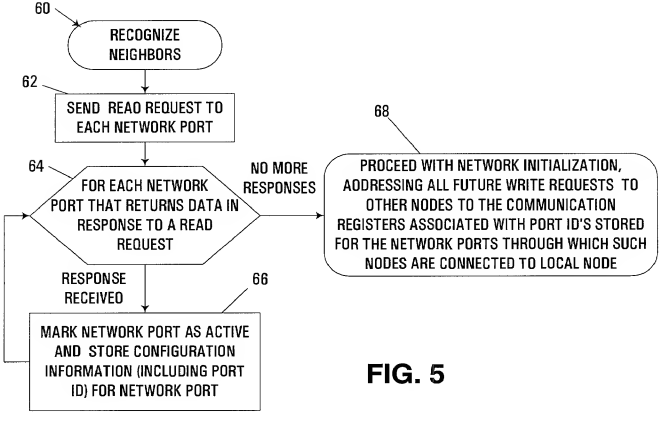
60
RECOGNIZE NEIGHBORS
62
SEND READ REQUEST TO EACH NETWORK PORT
64
FOR EACH NETWORK PORT THAT RETURNS DATA IN RESPONSE TO A READ REQUEST
NO MORE RESPONSES
68
PROCEED WITH NETWORK INITIALIZATION, ADDRESSING ALL FUTURE WRITE REQUESTS TO OTHER NODES TO THE COMMUNICATION REGISTERS ASSOCIATED WITH PORT ID'S STORED FOR THE NETWORK PORTS THROUGH WHICH SUCH NODES ARE CONNECTED TO LOCAL NODE
RESPONSE RECEIVED
66
MARK NETWORK PORT AS ACTIVE AND STORE CONFIGURATION INFORMATION (INCLUDING PORT ID) FOR NETWORK PORT

FIG. 5

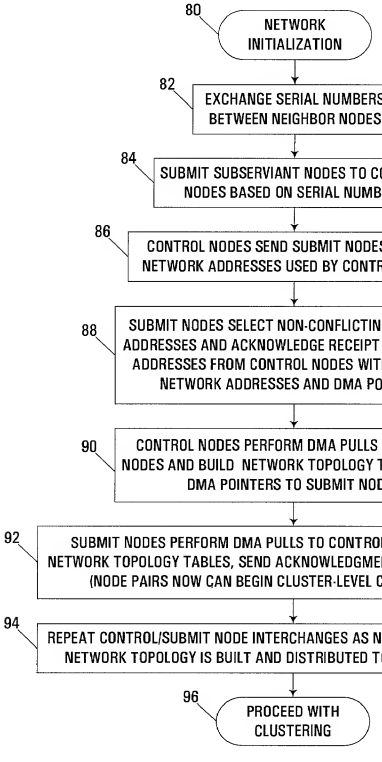
80
NETWORK INITIALIZATION
82
EXCHANGE SERIAL NUMBERS BETWEEN NEIGHBOR NODES
84
SUBMIT SUBSERVIANT NODES TO CONTROL NODES BASED ON SERIAL NUMBERS
86
CONTROL NODES SEND SUBMIT NODES SETS OF NETWORK ADDRESSES USED BY CONTROL NODES
88
SUBMIT NODES SELECT NON-CONFLICTING NETWORK ADDRESSES AND ACKNOWLEDGE RECEIPT OF NETWORK ADDRESSES FROM CONTROL NODES WITH SELECTED NETWORK ADDRESSES AND DMA POINTERS
90
CONTROL NODES PERFORM DMA PULLS TO SUBMIT NODES AND BUILD NETWORK TOPOLOGY TABLES, SEND DMA POINTERS TO SUBMIT NODES
92
SUBMIT NODES PERFORM DMA PULLS TO CONTROL NODES TO RETRIEVE NETWORK TOPOLOGY TABLES, SEND ACKNOWLEDGMENTS TO CONTROL NODES (NODE PAIRS NOW CAN BEGIN CLUSTER-LEVEL COMMUNICATIONS)
94
REPEAT CONTROL/SUBMIT NODE INTERCHANGES AS NECESSARY UNTIL UNIFIED NETWORK TOPOLOGY IS BUILT AND DISTRIBUTED TO ALL CLUSTER NODES
96
PROCEED WITH CLUSTERING

FIG. 6